

Assignment2

Some people are trying to make wine. They've added **yeast** to a sweet grape juice mixture and have allowed the **yeast** to grow. After several days, they find that sugar levels in the grape juice have dropped, but there's no alcohol in the mixture. The most likely explanation is that _____.

- ☐ A. the mixture needs more oxygen; **yeast** need oxygen to break down sugar to produce alcohol
- ☒ B. the mixture needs less oxygen; **yeast** only produce alcohol in the absence of oxygen
- ☐ C. the mixture needs less sugar; high sugar concentrations stimulate cellular respiration, and alcohol is not a by-product of cellular respiration
- ☐ D. the mixture needs more sugar; **yeast** need a lot of energy before they can begin to produce alcohol

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题目 2 of 25

A child is born with a rare disease in which mitochondria are missing from certain skeletal muscle cells. Physicians find that the muscle cells function. Not surprisingly, they also find that _____.

- ☐ A. the muscles require extremely high levels of oxygen to function
- ☒ B. the muscles contain large amounts of lactic acid following even mild physical exercise
- ☐ C. the muscles contain large amounts of carbon dioxide following even mild physical exercise
- ☐ D. the muscle cells cannot split glucose to pyruvic acid

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题目 3 of 25

ATP synthase plays a role in _____.

- ☐ A. glycolysis
- ☐ B. pumping hydrogen ions across the inner mitochondrial membrane
- ☐ C. pulling electrons down the electron transport chain
- ☒ D. generating ATP

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题目 4 of 25

Electron transport takes place in the _____.

- ☐ A. chloroplasts
- ☒ B. mitochondria
- ☐ C. ribosomes
- ☐ D. cytoplasm

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Lactic acid build up in muscles is a sign that _____.

- ☐ A. the muscles will be able to operate continuously for a long time
- ☐ B. aerobic respiration capacity has not been reached
- ☒ C. insufficient oxygen is reaching the muscles
- ☐ D. respiration is operating effectively

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题目 6 of 25

Large amounts of oxygen gas first appeared in Earth's atmosphere about _____ years ago

- ☐ A. 500,000
- ☒ B. 2.7 billion
- ☐ C. 3.5 billion
- ☐ D. 10 million

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Photosynthetic organisms like grass are able to _____.

- ☐ A. change the light energy from sunlight into sugars
- ☐ B. make all of their organic matter from organic molecules in the soil.
- ☐ C. use water they take in through their leaves as a final electron acceptor.
- ☒ D. use substances in the air as a major source of carbon

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题目 8 of 25

Respiration describes the exchange of gases between your blood and the air. Cellular respiration describes the _____.

- ☒ A. production of ATP
- ☐ B. use of carbon dioxide
- ☐ C. production of glucose
- ☐ D. production of oxygen

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The ultimate source of the energy in food is _____.

- ☒ A. the sun
- ☐ B. consumers
- ☐ C. producers
- ☐ D. ATP

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What compound directly provides energy for cellular work?

- ☐ A. glucose
- ☒ B. ATP
- ☐ C. fat
- ☐ D. $C_6H_{12}O_6$

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Where are photosystems located?

- ☒ A. thylakoid membrane
- ☐ B. mitochondria
- ☐ C. microtubules
- ☐ D. stroma

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Which of the following is a result of glycolysis?

- ☐ A. a net loss of two ATPs per glucose molecule
- ☐ B. conversion of NADH to NAD⁺
- ☒ C. conversion of glucose to pyruvic acid
- ☐ D. production of CO₂

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_____ is the source of the oxygen gas released by a photosystem.

- ☒ A. H_2O
- ☐ B. Chlorophyll a
- ☐ C. CO_2
- ☐ D. $\text{C}_6\text{H}_{12}\text{O}_6$

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A cell that completed the cell cycle without undergoing cytokinesis would _____.

- ☒ A. have two nuclei
- ☐ B. not have completed anaphase
- ☐ C. have less genetic material than it started with
- ☐ D. have its chromosomes lined up in the middle of the cell

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21秋第一次作业

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A karyotype (a chromosome display) would be unable to determine _____.

- ☐ A. sex
- ☐ B. Turner syndrome
- ☐ C. Down syndrome
- ☒ D. eye color

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题目 16 of 25

Chromatin consists of _____.

- ☐ A. DNA only
- ☒ B. DNA and protein
- ☐ C. protein only
- ☐ D. RNA and protein

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题目 17 of 25

Crossing over during prophase I results in _____.

- ☐ A. nondisjunction
- ☐ B. reciprocal translocation
- ☐ C. duplication
- ☒ D. genetic recombination

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题目 18 of 25

For a species with four pairs of chromosomes, _____ chromosome combinations are possible.

- ☒ A. 16
- ☐ B. 20
- ☐ C. 4
- ☐ D. 8

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减数分裂第二阶段已经是经过减数之后的染色体组。

题目 19 of 25

Genetic variation is accomplished by all but one of the following. Choose the exception

- ☐ A. the events of meiosis I
- ☐ B. independent assortment
- ☐ C. crossing over
- ☒ D. the events of meiosis II

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题目 20 of 25

How many chromosomes can a gamete possess as a result of nondisjunction?

- ☐ A. $2n + 1$ or $2n - 1$
- ☐ B. $2n + 1$ or $n - 1$
- ☒ C. $n + 1$ or $n - 1$
- ☐ D. $2n - 1$ only

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题目 21 of 25

How many chromosomes does an individual with Turner syndrome have?

- ☐ A. $2n + 1$
- ☐ B. $n + 1$
- ☐ C. $n - 1$
- ☒ D. $2n - 1$

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How much genetic material is present in a cell during prophase I compared to a cell that has completed meiosis II?

- ☐ A. one-quarter as much
- ☐ B. twice as much
- ☒ C. four times as much
- ☐ D. one-half as much

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题目 23 of 25

Ordinary cell division produces two daughter cells that are genetically identical. This type of cell division is important for all of the following functions EXCEPT _____.

- ☐ A. cell replacement
- ☐ B. asexual reproduction
- ☒ C. production of sperm and eggs
- ☐ D. growth of a multicellular organism

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Sexual reproduction in humans _____.

- ☐ A. produces an individual with 23 chromosomes
- ☐ B. combines two diploid gametes, producing a zygote
- ☐ C. produces a haploid individual
- ☒ D. allows a haploid sperm cell to fertilize a haploid egg cell

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题目 25 of 25

Which of the following is a stage of mitosis?

- ☐ A. DNA synthesis
- ☒ B. telophase
- ☐ C. cytokinesis
- ☐ D. interphase

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